

**CLAIMS**

1. An X-ray generator tube (10) comprising an electron gun (4) emitting an electron beam (7), an anode unit (2) comprising a target carrier assembly (1) having a flat surface (9) known as the target onto which the electron beam (7) is focused in a focusing spot (0), characterized in that the target carrier assembly (1) has an axis of revolution (20) substantially perpendicular to the mean direction of the electron beam (7) and passing through the plane of the target (9).
2. The tube (10) as claimed in claim 1, characterized in that the target carrier assembly (1) is of cylindrical shape overall with a circular cross section, the target (9) being situated in a plane passing through the axis of revolution (20) of the cylinder and in that the anode unit (2) comprises a housing, also of cylindrical shape overall and in which said target carrier assembly (1) is housed such that the axis of revolution (20) of the target carrier assembly passes through the focusing spot.
3. The tube (10) as claimed in claim 2, characterized in that the target carrier assembly (1) comprises at least one internal cooling-fluid-circulation duct (60) passing through the target carrier assembly in a direction substantially parallel to its axis of revolution and passing under the target in order to cool it.
4. The tube (10) as claimed in claim 3, characterized in that the duct (60) comprises a central part known as an exchanger placed under the target and formed of several secondary ducts (64) of cylindrical shape and with generatrices parallel to the axis of revolution of the target carrier assembly.

5. The tube (10) as claimed in claim 4, characterized in that the cross section of the secondary ducts is circular.

5 6. The tube (10) as claimed in claim 5, characterized in that the secondary ducts have a diameter of a size greater than the thickness of the wall separating them.

10 7. The tube (10) as claimed in claim 4, characterized in that the cross section of the secondary ducts is triangular or arch-shaped.

15 8. A method for producing an anode unit assembly for an X-ray generator tube (10), comprising the following steps:

- producing a target carrier assembly (1) having a flat surface (9) known as a target that has an axis of revolution (20) passing through the plane of the target (9);
- producing an anode unit (2) comprising a housing;
- inserting the target carrier assembly (1) in the housing of the anode unit (2) such that the axis of revolution (20) is substantially perpendicular to the mean direction of the electron beam (7) emitted by the tube (10);
- setting the angle of inclination  $\alpha$  of the target (9) to said mean direction by rotating the axis (20);
- fixing the target carrier assembly (1) into the anode unit (2).

30 9. The method for producing an anode unit assembly as claimed in claim 8 comprising a target carrier assembly (1) as claimed in claim 4, characterized in that the step of producing the target carrier assembly comprises the following substeps:

- producing a first mechanical assembly of cylindrical shape overall comprising a main duct (66) passing through said first assembly in a

direction substantially parallel to its axis of revolution and in its central part a recess comprising a flat surface (101), the main duct (66) opening into this recess;

- 5     • producing a second mechanical assembly (102) comprising a flat top surface and a bottom surface comprising identical grooves (103);
- assembling the second assembly (102) in the recess of the first assembly in such a way that the
- 10    grooves (103) are placed facing the flat surface (101) of the recess, the top surface of the second assembly constituting the target, the collection of grooves of the second assembly and of the flat surface of the recess constituting so many
- 15    secondary ducts that form the exchanger.